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Pedagogy of the Edges: Anarchism and the Implicate Order

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Abstract: The ecological, structural and epistemological crisis that the planet is facing right now cannot be resolved within the modern educational model. Education can be a means for the transformation of society to a more just, sustainable future – but only if education itself is transformed and re-envisioned by looking to the perspectives that have been most marginalized. This new kind of pedagogy will develop outside the realm of an academic discourse, and will be found in transformative social justice movements and the relationships that are formed in these movements.

Watching a weaver wind their weft back and forth through the warp of their loom, one is struck by the patterns that emerge through the movement. The distinctions are subtle - a moving of the hands, the fingers deftly switching threads and colors creating a design of infinite complexity which even the artist cannot fully explain. The craft is an ancient one, passed down from mother to daughter, from teacher to student, master to apprentice. And yet the image is a relevant one, the metaphor profound. For in communication and in revolution, there is an exultation of expression, a multiplicity of threads connecting the (invariably incomplete) design. Now, in this era of the early 21st century we are weaving the earth with wires, the airwaves with signals, the atmosphere with pollutants and planes, sending messages to each other with words, with keys, with electrons traveling through space. We are indeed within the matrix, and to emerge through this intricate, ordered design into a tapestry of desire, of wildness, of inter-subjectivity, we need to break the patterns and culture of domination, to reach to other threads that form a new kind of tapestry.

This paper is meant to explore the connections between these threads, the relationships that make the design. It is in this aspect that weaving mimics the *inter-subjectivity* of Habermas (1981/1987), and approaches the idea of a *de-centered subject* (Habermas, 1981/1987), and an order that is beyond our conception of time and space – an *implicate* order, as termed by theoretical physicist David Bohm (1980). The subject finds meaning through the threads, by expressing the strands as meaningless except in relation to each other, for it is the **relation** that makes the design, rather than the string itself. Many of the threads of our current culture and educational system form a tapestry of colonization, a rigid hierarchical structure based in patriarchy, white supremacy and capitalism (hooks, 1989) – both internal and external, that can only be overthrown through cutting the ties. Through the holes, wildness can grow. This paper is a response to the standardization, militarization and conformity taught in the modern educational system (Freire, 1970; Gatto, 2003; hooks, 1989;

Sterling, 2001). The premise of this paper is that reform of this system is insufficient, and that the edges are the places where change is occurring and can help re-join our culture with that of the planet. This shift is essential now, as we face a three-fold crisis of ecological, structural and epistemological collapse, and the transition needs to take place through education. I argue that anarchism has a role to play in this transition, and can move us toward a more complete understanding of ourselves and our relationships with each other and with the earth.

Through this examination of post-structuralism, post-humanism and critical theory in relation to the liberal model of education that dominates the field, this paper ties together and deconstructs the main forms of existing power relations in the pedagogical practices of the modern world. It also raises critical questions about the sometimes over-simplified idealism of progressive sustainability pedagogy, and introduces anarchy as a viable social order and pedagogical practice. But to be very clear about this exercise, it is important to recognize that anarchy is not so much a theory (social, economic or political) as it is a practice. Through this practice, the economic and political defragmentation resulting from the commoditized consumerist frenzy termed as *McWorld* by Barber (1995) are taken to their extreme, and the politics of power dynamics break down completely. As such, this paper attempts to continue where David Slater (2000) leaves off in his challenge to the Western notion of the universal *good* of progress and its alleged antidote in deconstructionism (Slater, 2000). Describing a discourse of discord, removing barriers to deconstruction and presenting practical examples beyond theoretical justification or over-complications of issues that supercede explanation – these are the goals of this paper.

To address the scope of the planetary crisis, education must be transformed and re-envisioned, and the anarchic edges of society, global social justice movements and relationships are key to this transformation.

Preamble/Personal Narrative

In my life, I have experienced several periods when the system that we all generally accept as the backdrop of our lives has broken down, when other realities became apparent, moments that I call *openings*, in

which the oft-repeated activist buzz-phrase “Another world is possible” became a visible, visceral reality. These were brief flickerings, flames that started burning and expanding but were soon extinguished by other forces more entrenched and powerful...but the embers remain, and will ignite again, hopefully in my lifetime. And as an educator, I have found myself turning to these moments for inspiration, ideas, and methods to tie the threads of resistance into a pedagogical approach based in the radical and post-modern approach, and using a popular educational model that deconstructs abstract theory and bases learning in direct action.

In my two decades of life experience that spanned my undergraduate to my graduate studies, I saw and experienced the best and worst of humanity in their relations to one another and this planet. I volunteered with WorldTeach in South Africa for a year after college, teaching kids in a rural village in a land that was trying to recover from the scourge of the apartheid system that had governed their lives for far too long. All around me the symptoms of the race-based system of oppression remained – from the black man who told me, “You are closer to God than I am, because you are white”, to the white man who said to me and a group of other white people (ignoring the presence of his black housekeeper in the room), “Africa was the dark continent - we came here, and brought them civilization! Without it, they’d still be hanging from the trees”, (at which point the black housekeeper sidled, unnoticed but by me, out of the room - thoroughly disgusted, I’m sure, but she never let on).

I have seen the battlefield for civil rights in our own country, in Montgomery Alabama, and in the Mississippi Delta. In Jackson Mississippi, I met a man whose face still bore the scars of his beatings and attempted assassination by those who represented “the Law” during the early 1960s when he was a civil rights activist. He took me on a tour of the county fairgrounds, which looked like any other county fairgrounds in the country, but which, in Jackson, Mississippi, had easily and swiftly been turned into torture grounds for hundreds of student protesters following the murder of activist Medgar Evers in 1963 by a member of the “White Citizens Council”. In that fairground-turned-torture-den, the police, the enforcers of “the Law” had beaten the protesters mercilessly, forced them into cattle pens, dunked their heads in water until they nearly drowned, and threatened to gas them to death.

I have been to Blair Mountain, in West Virginia – or what’s left of it, after mountaintop-removal mining

has blasted away most of what were once the scenic Appalachian mountains. It is the site of a stand-off between coal miners and the federal government, back in 1921, when the owners of the coal mines joined forces with the U.S. Army to attack workers who were trying to unionize – a hundred workers were killed in the battle, and the government forces even tried to bomb the workers. This is one of the many sad and shameful moments in U.S. history of which most history students have never learned.

Through the years, my travels took me to Africa, Central America and throughout the world, where I have seen the ongoing impact of the hundreds of years of European colonialism, and of U.S. foreign policy – which has included placing U.S. military bases in over 80 countries to establish U.S. dominance as the military powerhouse of the world (and to secure U.S. economic interests in those regions of course). Everywhere I have traveled, I have seen both the worst and the best of what humankind can do and has done.

I have seen the gaping ovens of the concentration camps in Germany, where millions of people were killed for not fitting Hitler's definition of "the master race" - killed for being Jewish, or handicapped, or gay, or for being a resistor or dissenter to the brainwashing Nazi regime. And I have met survivors of the U.S. nuclear bombs in Hiroshima and Nagasaki, people whose entire world was changed from a bright bustling city to a blackened, smoldering nuclear holocaust in seconds – and who have never truly recovered from that shock.

I have seen people at their worst: an eighteen-year old Israeli kid (who had moved to Israel from Brooklyn) pointing a fully-loaded automatic weapon at a bunch of five-year olds, ready to shoot, and telling me, when I pointed out that these were children, that, "These 'children' will grow up to be terrorists, so we might as well shoot them now."

But despite the many examples of humanity turned against itself in hatred and war, I have also witnessed people at their best – neighbors literally saving their neighbors from drowning in the flood in New Orleans following Hurricane Katrina – and, after pulling their neighbors from floodwaters, standing on a second floor deck surrounded by water and having a barbecue to share all the meat from their refrigerator before it went bad. In New Orleans after Katrina, I was able to be part of one of the most incredible and empowering relief efforts, organized by and for the people, in spite of a massive military presence and the greed of developers that tried to

use the devastation of Hurricane Katrina and the levee breaches to justify the disenfranchisement of hundreds of thousands of poor, mainly black residents, and to take over their hard-earned land for some kind of false, commercialized imitation of New Orleans culture. This period in New Orleans was one of those rare “openings” in which the system as we know it broke down, and the best and the worst of human nature were shown in their extreme form in the period following the storm. It was a time of deep pain and loss, in which I saw quite plainly how decentralized, non-hierarchical networks and structures work so much more effectively in a time of need than the top-down hierarchical structures we are taught to believe in. My experience in New Orleans felt like the system of patriarchy, racism and capitalism (hooks, 1989, 1994) that dominates so much of our lives had broken open, revealed itself in ugly and demonstrable ways, and through the cracks that opened up, new ways of being, relating, communicating, working, teaching and learning revealed themselves like dandelions poking their furry heads up through sidewalk cracks, offering their healing transformation to our broken world.

I have been lucky enough to see first-hand the work of a people’s revolution in Chiapas, in southern Mexico, where the indigenous people of the region rose up in 1994 to demand their autonomy and equality, in a nation that has historically considered them lower than dirt. Through their efforts, they have created collectivized clinics, schools, farms and communities, in spite of the ongoing Mexican military and paramilitary attempts to repress and destroy their joyful movement for self-determination. There, I met people like Felipe, a 15-year old in a Zapatista autonomous community, who looked up to the mountaintops with hope in his eyes after I showed him how to build a radio antenna, saying, “We will put an antenna on each mountaintop – our communities will talk and share what we learn!” In this case, I should point out that the Zapatistas as a movement were very careful about technology – they strove to remain independent and not become dependent on mined minerals and factory-built electronics to survive. When an Italian organization came to build a water-powered electric generator, the community told them they only wanted enough electricity for a few light-bulbs and one computer for the village – no more than that.

I have walked through the streets of Managua, where a similar movement of indigenous people in the late 1970s and early 1980s was decimated by the U.S.-supported Contras, who massacred whole villages without

pause, and brutalized an entire nation because that nation dared to challenge the logic and structure of colonial capitalism by proposing another way – a way of autonomy, education and freedom for all people. The faded murals on the walls in Managua, full of hope but covered in years of blood and grime, attest to the beautiful, broken rebellion that was the Sandinista movement for national liberation.

The majority of what I have witnessed in my journey as a social justice activist is incredibly discouraging, with the spread of a culture of fear, mistrust and scarcity. But everywhere I have gone, I have found people who are acting out of hope, fairness and justice instead of fear. Everywhere there are pockets of hope, and in these glimmers there is a world of potential to change things. It is small, so small, but my heart tells me it is growing.....and in this movement, I have managed to see and experience some really incredible things. This movement is what led me to the Leadership in Sustainability Education program, where theory is joined with practice in the educational sphere. By engaging with texts and authors grappling with many of the issues I saw played out on the ground in my work as a social justice advocate and practitioner of anarchism in action, this program has proven to be validating of both my life work and my values. It has also been challenging, as I work through my own privilege and prejudice to develop a critical analysis that deconstructs oppressions without dissolving into fragmentary meaninglessness.

The systemic worldview I have developed has been complemented and further articulated through the Leadership and Sustainability Education program, as I have synthesized these experiences into a critical, transformational pedagogy that incorporates a number of approaches. As a sustainability educator, I have found the Burns' (2015) model to be helpful in articulating the process and parts of sustainability education, and in constructing my own philosophy, although my philosophy diverges from the Burns' (2015) model in several ways. While I don't think that my base philosophy is in conflict with the Burns' model, my approach and practice differ. The Burns' (2015) model is based in an Okanagan traditional framework (Armstrong, 2008; Burns, 2015), and tries to incorporate indigenous perspectives in the ecological design process. But a group could potentially use the Burns' (2015) model and design process without experiencing a transformational learning experience based in a deep physical, personal and societal challenge to the systems of racial, social and

economic oppression, which is a piece that I hold as central to the learning experience. Of course, many learners do experience such challenges and disruption of dominant paradigms through the use of the Burns' (2015) model, but I could see a situation where the model is used and, particularly in a homogenous group of learners, this type of challenge does not arise.

In more ways than I had expected, I surprised myself during my Community-Based Learning projects (the service-learning component of the LSE program), when I resorted to the traditional role of teacher as the purveyor of knowledge to the learner. Standing up in front of a "classroom", acting as a "teacher", it was quite easy for me to slip into the role that I had criticized, but which was so insidious in my consciousness due to my many years as a student. My relationship to the concepts of teacher and classroom have changed over the course of this program, however, and this paper challenges both the external teacher-student dynamic and the internal "teacher-in-the-head" that even the most well-meaning educators return back to as they teach, continuing the pattern of domination. This is akin to Augusto Boal's (2006) "cop-in-the-head", a term he borrowed from French situationists (Wark, 2008), which he describes as the internalization of an external oppressor's power. The educational philosophy which I explore in this paper attempts to break that pattern, through the incorporation of a systemic view of the world developed through activism and horizontal organizing.

The critique and vision for education that I have developed over the past five years is grounded in several of the theories presented in this program. As a social justice activist, I knew that my approach to teaching had to be compatible with a liberatory, social justice-based approach. As bell hooks (1994) said in describing her approach to teaching, "I had never wanted to surrender the conviction that one could teach without reinforcing existing systems of domination. I needed to know that professors did not have to be dictators in the classroom." (hooks, 1994, p. 19) Part of what attracted me to the Leadership in Sustainability Education program is the fact that the program does not try to create teachers who will be "dictators in the classroom", but instead provides methods, practices and pedagogies based in earth-centered philosophies that are liberatory and transformative for both the teachers and learners. In the LSE program, I experienced teaching methods that asked me to reach inward and reflect on my own experiences and sense of place, and ideas of leadership in which teacher and

students could co-create knowledge and learning.

One of the concepts I was introduced to in this program, which helped me through my study of indigenous traditions and pedagogies, was the idea of *eco-somatics* of Nala Walla (2009), in which the body is re-integrated into the ecosystem around it through movement, play and exploration. As a person who has long engaged in struggles against oppressive structures and practices, I had been hesitant to try to represent a culture that was not my own, and unsure of how to teach about these cultures and practices in a genuine and unpatronizing way. The practices outlined by Walla (2009) provide tools to try to engage students in a place-based practice without being inauthentic or co-opting traditional cultures. These tools include reflective exercises to orient one's self in relation to the body and place through direct sensory perception (Walla, 2009) – a practice that could arguably be a method of de-centering self as post-modernists describe.

bell hooks writes of teachers as facilitators in a co-liberatory process (hooks, 1994), a process that engages with and overturns systems of oppression both internally and externally. Without this practical application of the internal processes into engagement in social action in the wider community, I feel that somehow the process is incomplete and the circle of transformation has not been closed. In any teaching situation, I feel compelled to involve the learners in addressing social, ecological and political issues in the community as part of the process of personal and societal transformation. This is a process that takes place only nominally in the classroom setting - but for which an educational praxis is essential and necessary for society as a whole to be able to carry out the type of transformation that will allow for our survival.

While I have managed to incorporate a number of the ideas and practices that I was introduced to through this program, my critique of the capitalist basis of education and my proposal for a pedagogy of the edges reaches outside of the realm of education and educational philosophy into political, economic and cultural critiques of Western capitalism and the culture of domination as a whole. In this analysis and vision, I look to critical theory, indigenous knowledge, place-based practices, posthumanism and anarchism to delve into possible ways out of the cycle of continued domination and subjugation.

Academic synthesis

The Crises

“We are now pretty obviously facing the possibility of a world that the supranational corporations, and the governments and educational systems that serve them, will control entirely for their own enrichment- and, incidentally and inescapably, for the impoverishment of all the rest of us. This will be a world in which the cultures that preserve nature and rural life will simply be disallowed. It will be, as our experience already suggests, a postagricultural world. But as we now begin to see, you cannot have a postagricultural world that is not also postdemocratic, postreligious, postnatural - in other words, it will be posthuman, contrary to the best that we have meant by ‘humanity.’”

-Wendell Berry, 1993

Ecological crisis. How do we wake people up to the seriousness of the problem of climate change, and how can we imbue our educational systems and structures with an eco-justice pedagogy that actually addresses the imbalance that capitalism has wrought without perpetuating the same structures of domination? The crisis is so severe, and so deep-rooted, that any eco-justice pedagogy that would actually succeed in addressing the crisis must uproot the educational system and structure as a whole.

It is hard to over-estimate the scope of the crisis we are facing – given the worldwide scientific consensus on the inevitability of severe impacts from human-induced climate change. As Paul Hawken puts it in his 2007 work *Blessed Unrest*:

"In one day alone we pump 85 million barrels of petroleum out of the ground, and then burn it up. And on the same day we spew 27 billion pounds of coal into the atmosphere. One hundred million displaced people now wander the earth without a home ... ExxonMobil made nearly \$40 billion in profits in 2006, enough money to permanently supply pure clean drinking water to the 1 billion people who lack it. We have consumed 90 percent of all the big fish in the oceans." (Hawken, 2007, p.23)

This is a crisis unparalleled in human history, and one which threatens to destroy our species and, quite possibly, render life on this planet uninhabitable in the near future if no correction is made in the current trend.

Structural crisis. The ecological crisis of climate change is a direct result of human intervention and the expansion of global capitalism through the fossil fuel economy. As Vandana Shiva (1993) points out, the domination view of nature is inherently violent, using principles of reductionism as a necessary part of the development of industrial capitalism/commodity production, to justify exploitation of ecosystems. Shiva offers a scathing critique of Western capitalist thinking as domination based in violence and colonialism that considers nature by itself to be valueless until claimed and turned into property by humans (Shiva, 1993). In response, she presents the metaphorical and actual battlegrounds presented by “regenerative sources of the renewal of life” (Shiva, 1993, p. 59).

Through decades of consolidation of industries and economies into larger and larger multinational corporations, we now find ourselves in the situation of Dr. Frankenstein (Shelley, 1818/1998): feeling powerless in the face of the violent monster we have unleashed upon the world. But unlike Frankenstein’s monster, the mega-corporations of modern capitalism are multi-faceted, complex systems made up of bureaucracies of humans who think their survival (ie. paycheck) depends on the survival of their corporate employer, and thus have a vested interest in maintaining each monster’s survival. As Tony Clarke (1996) points out in his critique of the unprecedented power of transnational corporations, nation states have diminished in power:

Armed with a network of policy research institutes and public relations firms, [the largest transnational corporations] are able to marshal expert analysis, develop policy platforms, conduct opinion polls and organize citizen front groups to form and direct government policies. As a result, nation states have surrendered most of the powers and tools they once possessed to regulate the operations of transnational corporations to serve the economic, social and environmental needs of their own people (Clarke, 1996).

Epistemological crisis. The crisis we face has another element – just as global capitalism crushes underfoot all opposition in the race to the end game of mutually assured destruction from war or climate disaster, we are facing an epistemological crisis as humans, unable to separate fact from fiction, unsure of truth, unclear

about what we know and how we know it. I argue that this epistemological and, in many ways, existential crisis is directly connected to the educational system that has inculcated generations of learners into the capitalist oligarchic system.

Modern society has become what Guy Debord (1983/1970) called *the society of the spectacle*, in which every experience is mediated – through screens, through masks, through what he termed a “*banalizing* trend that also dominates [modern society] at each point where the most advanced forms of commodity consumption have seemingly broadened the panoply of roles and objects available to choose from” (Debord, 1967/1983, p. 38).

As Jurgen Habermas (1981/1987) pointed out in his seminal work on the need for transformation of the public sphere (and of our definition of that sphere), what is defined as public culture is dominated by commercial interests that have no actual connection to the public other than attempting to mediate their experiences of culture in order to encourage them to consume (Habermas, 1981/1987). To address this crisis, we must look into our very conception of authority, and its legitimation.

The Invisible Committee, a group of French situationist anarchists, recognize this crisis as a stage of *posthumanism* (Invisible Committee, 2006; Braidotti, 2016). They write, “For generations we were disciplined, pacified and made into subjects, productive by nature and content to consume. And suddenly everything that we were compelled to forget is revealed: that the economy is political. And that this politics is, today, a politics of discrimination within a humanity that has, as a whole, become superfluous.” (Invisible Committee, 2006). In this post-modern, post-human reality, the traditional conception of formal super/subordinate relations based on coercion and power has been challenged by theorists like Ruggie (1998, p. 61) who conceive of a different type of organizational structure in which, “Authority is another name for the willingness of individuals to submit to the necessities of cooperative” (Ruggie, 1998). This idea must necessarily be combined with the modern conception of power as diffuse, with the role of state, government, and bureaucratic, centrally-imposed systems diminishing in proportion to the horizontal relationships of those on the edge.

How education helped to create these crises

The basis of the educational system in the U.S. is a model of productivity and compliance with a capitalist economic system (Freire, 1970; Gatto, 2013). This is a system that works to turn conscious, sentient humans into traumatized consumers. Only in moments of crisis – like the one we are in right now – do we see cracks in this system, and these are the edges where liberatory education and societal transformation can begin.

The *banking model* of education (Freire, 1970) is one in which a teacher is considered to have a wealth of information that they then deposit into the brains of students. Much of our liberal educational system, including higher education in the U.S. and internationally, is based upon this model, as “schools, from kindergartens to universities, prepare students to serve the powers [of the existing order], and they place people into positions that reflect the existing injustices of the social order” (Goldfarb, 2006, p. 119). Education, in this form, becomes a passive act, in which the student is an empty vessel with no agency, able only to be imbued with the knowledge passed down by the experts, rather than an individual with their own interests, talents and imagination.

This is a model that many people, when they think about education, automatically associate as the one and only way to teach and learn. But the banking model fails to address the scope of the ecological crisis we are facing (Orr, 1992; Wheatley, 1999) – in fact it is very likely at least partly to blame for that crisis. Because our schools have churned out generation after generation of students trained to regurgitate facts and figures with an aim of making money and scrambling to the top of the proverbial pyramid of our capitalist system, we are left with a population unprepared to think critically and creatively enough to address this crisis. Yet this is the model that remains prevalent in most societies around the world as the very definition of “education”.

Of course the idea that all education is engaged in this type of banking model of depositing information into empty minds is an oversimplification, and many involved in the higher education field see their role as educators quite differently from the “philosopher kings” of Plato (Republic, Book III, pp. 412-414). For example, in his discourse on the problems faced by first-generation college students, Kenneth Oldfield (2007) notes the moment that he realized, as an undergraduate, that his whole idea of education had been on gaining relevant skills to prepare himself to be marketable in the workforce, when a professor told him, “the primary

purpose of an undergraduate degree is to teach you more ways to enjoy life. Studying literature, politics, science, art, theater, and philosophy should prepare you for a richer existence, not employment” (Oldfield, 2007, p. 4). This led to a transformational moment for Oldfield in which he realized that everything he had learned about education up to that point had been based on a false understanding of its purpose.

The post-modern incarnation of the French situationists of the late 1960s, the so-called *Invisible Committee*, have written that the school system as it is constituted produces, “People who accept competition on the condition that the playing field is level. Who expect in life that each person be rewarded as in a contest, according to their merit. Who always ask permission before taking. Who silently respect culture, the rules, and those with the best grades. Even their attachment to their great, critical intellectuals and their rejection of capitalism are branded by this love of school” (The Invisible Committee, 2009).

Progressive educational theory, first laid out by John Dewey, holds that education is a raising, or bringing up of the learner into the culture of the society and the democratic process. Dewey and others examined the ways that learning was taking place outside of the formal educational setting, and found that a student-centered, student-led approach in which the learner’s interest and needs take first priority was more effective in bringing about progress toward that end than rote memorization or liberal education (Dewey, 1902). Dewey (1902) was a product of his times, presenting a Western-centered perspective that does not value or understand indigenous wisdom, describing how native people adapt to difficult climates by accepting and tolerating the conditions, while so-called “civilized people” adapt the climate to meet their own needs (Dewey, 1902) This Western-centrism ignores and subjugates to a lower realm indigenous societies and cultures, as well as contributing to a rapid depletion of resources, salination of the soil and water, and pollution of the air.

One problem with progressivism as a theory and approach to education is the idea of continuous growth, a concept that could be, and has been, misused by Western theorists. In one sense, an individual learner’s intellectual growth can be unbounded, but all too often this “progressive” concept is applied in other arenas, like the idea of developed/underdeveloped nations, and the driving force of capitalism – that economic growth can continue indefinitely. This may be a mis-application of the progressivist philosophy, which emphasizes

democratic principles and student-centered learning. But in our society, in which democracy and capitalism somehow get conflated, it is one that has unfortunately been used in this way.

The former New York State Teacher of the Year, John Taylor Gatto, who eschewed the educational system as we know it when he published his book *Dumbing Us Down*, then spent seven years researching the history of modern, compulsory schooling in the U.S., and found, “Forced schooling arose from the new logic of the Industrial Age – the logic imposed on flesh and blood by fossil fuel and high speed machinery” (Gatto, 2003, p. 37). In this sense, school as industrial-age, prison-like bureaucratic structure of domination and control is a logical manifestation of its role as the space to mold workers for the fossil fuel economy. This has manifested in the modern era as standardization of testing and curricula, with a focus on behaviorist-style compliance and control which inhibits creativity and critical thinking. As Tim Dintersmith writes after his study of teaching and schools across the country:

In U.S. education, nonexperts tell experts what to do. Priorities are set by legislators, billionaires, textbook and testing executives, college admissions officers and education bureaucrats...[channeling] kids down the same standardized path, impairing their ability to leave school able to create and develop their own path forward – arguably the most important competence young adults need in a world where careers come and go. (Dintersmith, 2018)

The entrenched nature of this system has made reform virtually impossible. Teachers, students, parents and policy makers who have tried to organize for change within the school system have found their attempts to be largely ineffective. John Taylor Gatto explains why – it is part of the design of the system to maintain itself and resist change:

At the heart of the durability of mass schooling is a brilliantly designed power fragmentation system which distributes decision-making so widely among so many different warring interests that large-scale change is impossible to those without a codebook...Structurally, control is divided among three categories of interdependent power: 1) government agencies, 2) the self-proclaimed knowledge industry, 3) various special interests, some permanent, some topical. Nominally children, teachers and parents are

included in this third group, but since they are kept virtually powerless, with rare exceptions they are looked upon only as nuisances to be gotten around. (Gatto, 2003, p. 334)

Re-envisioning education

The ways to address the multiple crises we face require a rethinking of our approach to education as a whole. Many of those involved in sustainability education weave together threads from the progressive and humanist schools, as well as popular education, to build curricula and alternative approaches. These alternatives are laudable and exemplify place-based and critical pedagogies, but are faced with a wall of resistance from a school system based on the traditional models of the last 150 years of modern schooling.

Dilafruz Williams and John Brown (2012) lay out a method for bringing students into systems thinking and ecological design – through a place-based educational model centered around a school garden (Williams & Brown, 2012). Students engage in grounded, reflective exercises that connect them with the local watershed and ecology. This model provides one example of how the authors managed to engage students in a deep and meaningful way about their role in the ecosystem that surrounds them.

Krapfel's (1999) investigations provide a methodology by which students can engage their ecosystem in ways that excite, rather than stifle, their innate curiosity. The way that Krapfel's (1999) students described their experiences of tagging and tracking flowers and leaves exemplify the core differences between a traditional, test-based approach to science education and a practical research-based method that sets the stage for that "Oh wow!" moment when students become truly engaged and connected. A particular example I connected with was a student who sat with him during recess to talk about the discoveries he was making, to ask questions and pursue the subject – but when the teacher asked, "What did you learn this week?", the student immediately reverted back to an emotionless response about the fruit and flower. Krapfel (1999) says that this sudden change in the student's manner made him realize that what we traditionally think of as "learning" is forcing students to guess which information the teachers want them to regurgitate, when learning is actually a dynamic and ever-changing process of questioning, testing, experimenting, discussing and discovery! So many times in school, I

felt that deflated feeling of Krapfel's (1999) student, when my excitement about learning about something had to instead be turned into a rote recitation or memorization of what would actually be on the test.

The most meaningful parts of my education were outside of school – out in nature, in the woods, in the creek, on the farm. But this experience for children is becoming increasingly rare. A 2007 Congressional hearing noted, “In a typical week, only 6% of children, ages 9 - 13, play outside on their own” (No Child Left Indoors Hearing, 2007). The testimony presented the results of studies showing that spending time in nature has a positive impact on physical and psychological health – not just because of the absence of toxic pollutants, which is how public health experts see it, but the presence of elements that build health – the studies even suggested that hospitals and rehabilitation centers be constructed in natural settings to help patients heal (No Child Left Indoors Hearing, 2007).

But as Nolet (2009) points out, even as we face an unprecedented ecological crisis, teaching and teacher education has focused on a *neo-essentialist* model which is politically hostile to a systemic restructuring. Williams and Taylor (1999) also outline the difficulties of working within a public school system that does not value the deep practical, systemic, reflective, community-based framework of place-based sustainability education. But if we are to survive as a society and planet, we need to embrace and expand such values and practices, rather than discouraging these efforts.

Emancipatory education does not necessarily consider the acquisition of knowledge to be the end of the educational process. It is not simply knowledge-based, but is about relationships and interactions, focusing on real-world issues and crossing disciplines (Wals, 2011). Authors like Wendy Agnew (2015) promote a system of education that is child-centered, mixed staging (combining children in three-year age groups), immersed in nature, with “materialized abstractions” allowing children to self-teach, using mentors to give children tools to pursue their interests – like a “cognitive old growth forest model” of education (Agnew, 2015 p. 238).

These visionary educational theorists (Agnew, 2015; Krapfel, 1999; Nolet, 2009; Wals, 2011; Williams & Brown, 2012; Williams & Taylor, 1999) all point to the fact that we are approaching a post-industrial, post-capitalist phase of human development, and our educational systems and practices need to help prepare learners

for this transition. The level of the problem is hard to over-estimate, and without looking to indigenous traditions, non-western cultures and place-based processes and practices of learning (i.e. the edges), we may not survive as a species through this era.

Beyond the alternative education models

Criticism of the alternative critical discourse. Even this alternative “critical” discourse surrounding sustainability education has its detractors, with writers like Kahn (2008) and Bowers (2003) going so far as to challenge Paolo Freire (1970) as promoting a type of *technical ecoliteracy* (Kahn 2008) that can end up perpetuating the dominant systems unless it is incorporated into a critical pedagogy of place. According to Bowers (2003), root metaphors are used by critical theorists to explain or define new ideas, but are never themselves defined or explained. These end up underlying what is thought of as “rationality”, but which are actually culturally-specific, language-based assumptions. In Western “Enlightenment” discourse, these root metaphors are “progress, anthropocentrism, and subjectively centered individualism” (Bowers, 2003, p. 7). In this way, Freire (1970) and other critical pedagogical theorists presume that succeeding generations will necessarily progress beyond the understanding of the previous one – but this is based on a root metaphor of progress based in the Industrial Revolution.

Bradley & Wilkie (1980) caution critical theorists to avoid unnecessarily attributing all organizational problems to capitalism. They criticize authors who have engaged in a *dialectical* analysis (i.e. class-based critique of capitalism), saying that many such authors use subjective language and imprecise arguments. Additionally, they point out the danger of being dismissive of whole bodies of work and fields of study within the organizational analysis framework simply due to political ideological bias (Bradley & Wilkie, 1980).

Criticism of sustainability pedagogy. In addition to challenging the technical ecoliteracy of Freire (1970), Kahn (2008) also talks about what he calls the “catastrophic” ideas and language of the political left when it comes to describing the current ecological situation, and argues that the most catastrophic scenarios

imaginable are not too far-fetched, given the scientific evidence of climate change, and we must be careful in the coming decade to avoid *greenwashing* of educational initiatives to transform teaching and learning to address the crisis (Kahn, 2008). Greenwashing is a term used to describe the practice of multinational corporations and governments to hide behind a veneer of ecological and environmental concern in order to co-opt environmentalism for profiteering and expansion of capitalism.

Other critics of sustainability and transformative pedagogies include Furman and Gruenewald (2004), who are critical of social justice thinkers, many of whose assertions, they say, are embedded in certain cultural assumptions. Among these assumptions are those of critical humanism, used to point out inequities that are human-caused through our social systems and call for radical changes to overturn these inequities to bring about a closure of the “achievement gap”; and a narrative based on a Western enlightenment model that includes adjusting the social contract to be more equitable (Furman & Gruenewald, 2004, p. 53). The authors question the assumption that “closing the achievement gap” is really an outcome worth pursuing, when what is really needed is to embed social justice in a larger framework of *ecojustice* (Furman & Gruenewald, 2004).

Another critique of alternative educational programs like the place-based, sustainability education models described in this paper is the question of how success can be measured. C.A. Bowers (2003) provides a possibility of measurement - by recognizing cultural and ecological intelligence as valuable – instead of valueless, as such forms of intelligence are currently considered in the profit-driven capitalist economic model (Bowers, 2003). This type of intelligence, for Bowers (2003) and others like S. Kaza (1999), includes a complex understanding of community, place, tradition – particularly indigenous tradition – and the relationships between culture and ecology. Similar to Bowers (2003), Justin Kenrick (2009) proposes an alternative way of thinking about society and the planet which he calls *commons thinking* (Kenrick, 2009), which contrasts with the dominance approach of mainstream western society – the main contrast being that commons thinking focuses on relationships, while domination thinking focuses on control.

Post-modern critiques. Postmodern critiques of the educational system go even beyond the radical

critiques of education offered by theorists like hooks (1989, 1994), Freire (1970) and Illich (1983), all of whom call for a radical change in our approach to education. Braidotti (2016) puts forth a critique of humanism, and of the binary relationship seen in the human/non-human paradigm, while also criticizing the capitalist approach toward technology and the merging of human and non-human with no ethical basis beyond making a profit (Braidotti, 2016). She talks about a cartology of nomadism – by which she means that the modern maps of internal and external planes of time and space are insufficient to the task of describing the postmodern, and that the nomadic subject must “constitute and sustain a plane of immanence” (Braidotti, 2016, p. 29) in which imagined futures interact with the lucid reality of crisis. In the view of Braidotti (2016) and other postmodern and posthumanist pedagogists, the whole structure of standardization and institutionalized learning is the problem, as their aim is to tear down every standard and structure that exists within the educational system. Relationships and interactions between people and between humans and non-humans come to the forefront, as the structures and institutions disintegrate and the lines of separation become blurred.

As particle physicists have begun to discover as they look at the behavior of electrons and even smaller particles, the act of observation itself has an impact on the behavior of the particles – challenging the idea that there is an “objective reality” that a scientist or other “authority” can somehow observe and describe while separating themselves from the object of observation. As such, the postmodernists may be on to something when they tear down the meta-narrative of scientific objectivity. But valid critiques also need to be considered: that the postmodernists have abstracted language to such an extent that it obscures meaning and discourse, that the tearing down of everything makes it harder for organizers trying to address the imbalances of power in society, and that postmodernism lacks the framework to build a coherent movement of resistance.

Moving toward the edges – a discourse on pattern and order

A child playing freely with imagination and purpose is a beautiful thing to watch. The joy and exuberance of a child pursuing their passion through play is unparalleled in any “adult” experiences (except, perhaps, for those adults who have not lost their sense of wonder). Yet so much of our educational system and

so many of our educational techniques are meant to stifle this free play, to redirect the child to a rigid schedule of sitting and studying in a way that cuts them off from their true nature. The nature of a child is to play, to explore, to discover, to imagine. But with our system's focus on "benchmarks and standards", we are condemning our children to toil and drudgery, and severing them from their nature.

Our society needs to engage in a major cultural and paradigm shift, and educational shifts are essential to this larger societal transformation (Freire, 1970). I particularly appreciate the metaphor provided by Prakash and Richardson (1999) of a toilet, which "ties people's intestines to several centralized bureaucracies" and separates them from communal relationships, as a metaphor for our post-industrial capitalist technology-driven and fossil-fuel based economy and society. The problem is perpetuated, as Nolet (2009) points out, by projects and programs that promote so-called sustainable development which build the idea of a "growth economy", but leave no room for resource regeneration, which is essential for systems that will sustain life. As these countries develop, their consumption surpasses their production, and they end up more and more indebted to the richer nations. The answer cannot be only through technological innovation, but must involve an improvement of society to bring human existence into alignment with the rest of nature (Nolet, 2009).

Given the depth of the current crisis – which is an ecological, structural and epistemological crisis of planetary proportions – reform of parts of the educational system as we know it is insufficient. We need a re-envisioning of what education means, and the role that education can play in transforming society to transition through this crisis. To develop the new kind of pedagogy needed for this societal transformation, we must look to the edges. Outside the realm of academic discourse, in the direct actions of the movement for social and ecological justice worldwide, a rhizome-like structure is forming that can serve as a guide to this transition.

Thinking about patterns, tapestries and the relationship between the self and the planet raises the question of whether we are actually individuals separate from the world around us. Mycelia, as John Danvers (2009) points out in a metaphor for human relationships, are fungi which connect in a neural-like pattern underground, in which individual organisms do not exist as a single entity, but are all connected in a network of veins and threads (Danvers, 2009). As Margaret Wheatley describes it, our educational system and our society as

a whole are trying to use Newtonian science in a quantum age (Wheatley, 1999). Taking this a step further, I believe that our promotion of Newtonian science, which has a logic and order that is mechanical, logical, rules-based and foundational in nature, has gone hand in hand with the growth and expansion of the capitalist economic system. We confuse order with control, and end up with an educational system that focuses more on disciplining and controlling students and their behavior than allowing them to awaken to their innate sense of wonder and curiosity. Wheatley (1999) asks, “What if we stopped looking for control and began, in earnest, the search for order? Order we will find in places we never thought to look before – all around us in nature’s living, dynamic systems” (Wheatley, 1999, p. 25). This means taking the idea on which so much of our educational system is based – control – and letting that go. Where will such a release lead us? Well, as Wheatley (1999) points out, it may just lead to a new kind of order – one that is based in nature’s ecological processes.

Toward an implicate order. What would such an *order* look like? This is where the concept proposed by theoretical physicist David Bohm (1980) comes in: the idea of an *implicate order* that is beyond our current conceptions of time and space within a finite universe. According to Bohm (1980), the fragmented notions of reality provided by modern sciences imply unbroken wholeness but are contradictory to each other in their notions of static modes of existence and in the processes of thought used to explain them. In contrast, the implicate, or enfolded, order is one “more appropriate to a universe of unbroken wholeness” in which time and space no longer constitute the dominant factors determining the relationship of elements (Bohm, 1980, p. xv). The *explicate order* is a special and distinguished form within this general totality, in which time and space are separate and defined in explicate methods and forms, in which atoms are individual particles that make up the building blocks of the universe. This “fragmentary self-world view is fostered and transmitted (to some extent explicitly and consciously but mainly in an implicit and unconscious manner)” in the standardized teaching methods used in most schools (p. 15). To achieve an understanding of the implicate order of Bohm (1980) requires a new kind of thinking – which hearkens back to ancient ways of thinking – that does not divide and subdivide into categories and specializations, but acknowledges an order that is beyond our understanding.

A pedagogy of the edges. This brings me to the concept which I call a pedagogy of the edges, which incorporates aspects of critical theory, transformational pedagogy and posthumanism with the permaculture design principle of valuing the marginal and the edges – the places of intersection – as locations of transformative change, growth and learning (Holmgren, 2002). The Oxford English Dictionary defines **edge** as “the outside limit of an object, area, or surface.” Other definitions include “the point immediately before something unpleasant or momentous occurs”, as well as the verb form, “give an intense or sharp quality to”, and “move or cause to move gradually or furtively in a particular direction”. The edge is a concept that connects with many aspects of nature, including coastlines with their raucous interplay of sea and sand, the dusk and dawn with their brilliant, often breathtaking displays of color, the fractal dimensions of the leaves of trees as they reach toward the sun, and the festival of life that plays out on the edges of creeks and streams.

Mass social movements consisting of a diversity of organizations and groups working toward a common purpose, like the alter-globalization movement of anarchists and Zapatistas described in the preamble, are examples of ways in which Berry’s *solving for pattern* (Berry, 1992) evolve naturally into what Paul Hawken (2007) calls the *earth’s immune system* (Hawken, 2007, pp. 143- 165). Just as, within the human immune system, a multiplicity of antibodies “lock onto antigens as neatly as a key to a hasp, neutralize these invaders while simultaneously signaling for help....The hundreds of thousands of organizations that make up the movement are social antibodies attaching themselves to the pathology of power” (Hawken, 2007, p. 164). To be clear, by using this analogy from Hawken (2007), my purpose is to illustrate the connectedness of movements to each other and the work of transforming power, not necessarily to anthropomorphize the planet with something like the Gaia hypothesis that the earth itself is a sentient being. In that sense, I agree with Hawken’s (2007) assessment that, “Whether or not the earth itself is an organism, as some scientists believe, it is one system, and within that system all life as we know it coexists” (Hawken, 2007, p. 113).

My aim is to deconstruct the concept of power and control which presides over so much of our culture, and our educational system, and to envision patterns and practices that can begin to shape a new way of teaching

and learning. This does not mean that I propose a set system of pedagogical practices and structures – this would contradict the heart of my thesis, which is that we must co-create this new way together, without a set mold to be imposed. David Slater (1993) asks, in a tone of near despair, “Must every horizon exist only as mirage; are we living in a time of perpetual deconstruction, or are there interstices and margins in which forms of reconstruction might emerge and grow?” (Slater, 1993). Slater’s (1993) question indicates the extent to which even the most forward-thinking development (and post-development) theorists are caught in the paradigm of construction as a necessary element for growth. If Derrida (1967/1998) were reading this, I could see him looking into the word reconstruction, and its inevitable connection to a physical or mental monument of the mind, picking apart this inevitability, and very quickly taking this sentence to its most possible parts – yes, deconstructing even the idea of perpetual deconstruction. For Slater’s (1993) question is a grasping at structure and syntax that no longer has a firm hold in reality. The idea of finding margins in which to reconstruct some semblance of an educational system is, in and of itself, problematic in its reflection of colonial notions of conquering the frontier.

To be clear, that is not my purpose in proposing a pedagogy of edges. Instead, I seek a deconstruction, internal and external, of the center-margin dichotomy which is so much a part of Western imperialist education and culture. Searching fruitlessly for margins in which to begin reconstruction is an outright reversal of this effort. This internal deconstruction requires an unlocking of long-held mental models and conceptualizations that hold us and compel us toward a replication of existing structures and systems. As Slater suggests, “the decolonization of the imagination is as critical as is the need for critique” (Slater 1993, p. 433).

None of us likes to be forced into categories, to be socialized into a system that degrades and destroys us. We would like to create a place where children and adults can flower and grow to their full potential, a place where the imagination can run wild and the resources will be available to young inventors and dreamers to help their dreams become a reality. To make this possible, we need to look to the edges, where such places already exist and where change is rapidly transforming relationships between people and the planet.

Anarchism as pedagogical praxis

“Anarchism is the only philosophy which brings to man the consciousness of himself; which maintains that God, the State, and society are non-existent, that their promises are null and void, since they can be fulfilled only through man’s subordination. Anarchism is therefore the teacher of the unity of life; not merely in nature, but in man.”

-Emma Goldman, 1901

Anarchy does not mean chaos and violence. Quite the opposite. Within a hierarchical structure, orders come from the top, and those faced with a direct, real-life situation often find themselves confused and frightened, and do not know what to do because they have not received orders to tell them what to do. So they react in panic, thus increasing the volatility of the situation. In this hierarchical type of structure, no one is held accountable for their actions, because they can just fall back on the excuse that they were “just following orders”. This separation of self from “other” has allowed people to justify to themselves actions that they would otherwise consider unconscionable. As Thomas Patterson has noted, “An essential feature of civilization...is social stratification – that is, a set of hierarchical relations through which contempt for and fear of ‘the other’ is expressed” (Patterson 1997, p. 21). This stratification of thought has been the basis for much of the usurping of personal, political and economic power throughout the world – and indeed, has been the basis for much of my own unconscious racism and privilege that I have had to acknowledge and work through.

Temporary autonomous zones and play. During the mobilizations for the protests of the global justice movement, and at other times as well, my comrades and I formed *temporary autonomous zones*, spaces within our frontier-less, mapped out world in which, for brief moments or even days, it was possible to live outside the map of daily life, schedule and expectation. “Metaphorically it [the temporary autonomous zone] unfolds within the fractal dimensions invisible to the cartography of Control” (Bey, 1991, p. 79). The festivity of these events, through puppetry, pageantry, radical theatre, music and creativity, re-examines the possibility of free play, which is something I have later examined as an educator, through the model of the free school movement (Illich, 1970/1983).

For such zones to be created, spontaneity combines with ingenuity to synergize the energies of those

present in search of adventure, diversity and freedom. In creating these zones, outside of the *cartography of control* (Bey, 1991; Derrida, 1967/1998), we followed the tradition of more than a century of radicalism that culminated, in many ways, in the Situationist International of Paris in 1968. These are zones on the edges – outside of the realm of the work-a-day culture of capitalism. Indeed, they manage to create their own culture, based in a deep tradition of anarchism and situationalism, if only temporarily. As T. Ivison notes, “despite efforts to organize in the academies, much of the work that might be seen as the true descendant of the Situationist International is being done on the margins, or in mutual exclusivity to those who have elected themselves as the purveyors of radical thought” (Ivison, 2012).

One of the most important aspects of these temporary autonomous zones, embodied pedagogically in the free school movement (Illich, 1970/1983), is play. As sea foam plays along the sand, as the weaver loosens the edge of the pattern to “give it a little play”, as an articulated joint which “has some play in it” (Derrida, 1967/1998) moves in multiple directions, as children gleefully explore new worlds and identities, this aspect cannot be underestimated. Returning to the postmodernists, Derrida (1967/1998) points out that there is no absolute identity, that nothing stands outside the system of differences. Derrida (1967/1998) encourages the reader to think about his concept of *différance* as something which has play in it – between the passive and active voice, between written and spoken forms, between time and space – in short, he is introducing a concept that goes beyond language as symbol and exists only in relation (it has neither existence or essence) (Derrida, 1967/1998, p. 111). Play, according to Derrida (1967/1998), is essential to pushing liberatory moments into conscious and practical manifestation of *différance* (Derrida, 1967/1998).

Relationships and interconnectedness. In my experience with numerous autonomous, self-selecting teams in the world of social justice activism, the *affinity groups* that form naturally as people come together in ebbs and flows of action are able to function at a very high level of cooperation, trust and effectiveness. Unlike organizational theorists like Bolman and Deal (2013), I have not found it necessary to guide teams into any particular structure or management configuration (Bolman & Deal, 2013). Instead, my experience has led me to

the conclusion that a formal structure is not necessary to successful team functioning – or to learning, for that matter. The more important component is building relationships and trust between team members by working together toward a common goal.

Braidotti (2016) envisions a community that goes beyond a physical differentiation of the self and other, and is based in relationship and interconnectedness with others. Instead of the negative connection of shared vulnerability, community can be created by coming together on the positive basis of shared ideas and projects -- a re-framing of oppressed groups as agents of their own destiny. The aim of such a critique is to deconstruct and expose the weakness of the liberal tradition and other forms of education associated with modernism.

I have lived in communities like those described by Braidotti (2016), as part of the nascent anarchist movement of the early 21st century. One of the most visible and well-known manifestations of that movement was the protests that led to the breakdown of the World Trade Organization Summit in Seattle, Washington in 1999. How did a previously disconnected network of organizations and affinity groups manage to come together, a writhing, massive sea of humanity, and essentially destabilize the heretofore impenetrable power of the World Trade Organization (WTO)? It was through the kind of horizontal organizing, relationship-building, and respect for a diversity of tactics to approach a common goal, described in Hawken's (2007) *Blessed Unrest*. The momentum of such a movement, once it begins moving and developing reiterating patterns of scale from the micro- to the macro- levels, cannot be underestimated.

Horizontal organizing and leadership. Convergences like those seen in Seattle in 1999 to oppose the WTO did not come out of nowhere, but from years of horizontal organizing that took place, like mycelia, mainly underground and unnoticed. The leadership in these movements is not hierarchical, or even "leadership" as we tend to understand it in the Western world, in which a person or people emerge in the forefront of a movement as spokespeople and policymakers. Instead, leadership is mycelial, with people reaching out to each other across root-like networks of organizing – much like nerve cells in the brain seem to reach for others engaged in similar processes. The focus of decision-making meetings is the stewardship of the community. As Armstrong (2008)

pointed out in the explanation of why a consensus process, with a focus on the minority voice, is essential to an Okanagan Worldview, "The process then becomes, in terms of a democratic process, a different one than that of Robert's Rules. The process becomes something that is participatory, that is inclusive, and that gives people a deeper understanding of the variety of components that are required to create harmony within community" (Armstrong, 2008, p. 72). Much like the Okanagan process of decision-making, the elements of the U.S. government that are considered the most "democratic" elements are those co-opted from the Iroquois Confederacy by Thomas Jefferson following his study of their governing methods (Stubben, 2000).

The anarchist movement of the early 21st century has taken much inspiration from the Zapatista model, in which a group of indigenous Mexicans marked the occasion of the implementation of the North American Free Trade Agreement (NAFTA), January 1st, 1994, by taking up arms and launching a revolution. Their aim was not to take over power of the Mexican state, but to establish their land as an autonomous region that could live free of the reign of a colonial legacy and corporate-imposed trade agreement. Zapatismo, as their movement is called, practices *horizontalidad* (in English, "horizontalism"), in which all voices are equally valid in decision-making processes for the community. This practice scales up, from household to village to regional center to the global Encuentro ("Encounter"), a gathering of marginalized and oppressed groups from around the world. "The Encuentro is not just a gathering of various marginalized peoples against neoliberalism; it is a new political strategy...the Encuentro is not about a single issue, it is a globalization of the struggles themselves: a 'globalization' from below" (Nail, 2013).

As Sarah Dee Shenker (2012) found in her study of Zapatista autonomous schools, "The role of education in protecting indigenous culture can thus be seen as a dual force. First, the schools are used to actively promote the Tojolabal culture, providing a theoretical basis for and an active enforcement of community practices. Second, the schools are used as a defensive tool with which to shield the students from the growing force of external cultural influences" (Shenker, 2012). The students and *education promoters* – they avoid the term teacher – are co-creators in the learning process, with no hierarchy between them. In my experience with the Zapatista autonomous communities, I found the exuberant sharing of information in non-hierarchical ways to

be a refreshing redress to the education of colonization that prior generations in these autonomous areas had been subjected to. Where the colonial educational model rejects and denies indigenous identities and cultures, Zapatismo rejoices in the traditional, indigenous culture of those who created and practice it.

In looking at transformational pedagogy, Wheatley (2006) describes the transformation of organizations (or at least our view of them) from machines into living systems. Wheatley (2006) says that the gift of the quantum worldview is the realization that there are no independent entities anywhere at the quantum level – only relationships (Wheatley, cited in London, 2008). If we pull this concept out from the quantum level to apply it to our human society, none of us is the “abstract, rational being” of Kant (1781/1929) – and so much of Western philosophy and science. We are, ourselves, a web of dynamic relationships inside and out. This interrelatedness forms the basis of the pedagogy of the edges that this paper is proposing. To accomplish this transformation, I argue that our society as a whole must be transformed. How? We must look to the edges – of ecosystems, of patterns, of our base of knowledge and understanding, and of society as a whole. This is where the clues emerge that will be our guide to the transformation of our society and our “selves”.

Impediments to implementation:

The question arises at this point: How can we actually implement such a transformation in an educational setting? Engaging in struggles for social justice and organizing in horizontal and rhizome-like ways to build neural networks of resistance is one thing, but we are in a society that has a compulsory educational system in which children are sorted by age and sent into classrooms with a teacher presiding over their daily activities. How does such an analysis and vision as laid out in this paper apply to such a setting? I argue that one of the main problems is the idea of a “classroom setting” in and of itself, and the way in which compulsory schooling is imposed in our society. The transformation of the educational system must be accompanied by the transformation of society as a whole. This is a major organizational challenge that will present an impediment to the implementation of this much-needed transformation. But this impediment is not insurmountable.

The major obstacle to the transformation envisioned in this paper is, of course, capitalism itself, which,

though human-created, seems to have developed a superhuman mystique that renders it impenetrable by many of those within its clutches. Capitalism and its adherents have an uncanny ability to absorb and co-opt resistance.

As Harry Cleaver points out:

“The defenders of capitalism may strike at their opponents with violence but in the end their only real defense, as the more sophisticated among them realize, is finding ways to re-internalize and harness the opposition. This has always been capitalism’s strength, the way it has absorbed human energy and imagination.” (Cleaver, 1999).

To avoid this co-optation by the capitalist forces that dominate societies worldwide, we must be vigilant and imaginative, playful and persistent. A transformation of culture, thought and structure is already taking place, and will expand from where it is happening, at the edges of society. It is important to note that I am not calling for the imposition or implementation of a new program or structure – as that would be repeating the same patterns that I, and many others, have worked to deconstruct and dismantle. Instead, I am representing here what I have observed and participated in, and which I see expanding worldwide right now. The movement of movements is a leaderless web of relations, and something which we co-create as we go.

In anticipation of critiques

One of the first critiques I anticipate is a question about whether the pedagogical approach I am proposing ends up subjugating the role of teacher to such an extent that this role is no longer relevant. To that end, one would ask, when promoting education through *co-creation*, that discounts actual knowledge that some people hold that others are interested in learning. By making learner equal to teacher, that creates a kind of *knowledge relativism* that makes a mockery of education. One response can be found in the distinction made by David Orr (1992) between “‘schooling’ - what happens in schools and colleges, ‘training’ - the inculcation of rote habit, and ‘learning’ - what can happen throughout life for those willing to risk it” (Orr, 1992, p. xi). Too much of what constitutes education today consists of schooling and training, with very little actual learning. The relegation of education to people of certain ages and at certain times of day is one of the fragmentations of our

modern society that must be overcome in order to approach an implicate order or wholeness. This is not to say that teachers do not have a significant role to play in this transition – indeed, it has been my experience that many teachers are extremely innovative and insightful guides who succeed in helping kids learn **despite** the school system, not because of it.

Another critique is that of privilege – as someone who has myself been through the educational system and benefited from it, I could be challenged as denying that opportunity to others when I call for the dismantling of the educational system as we know it. I do not necessarily have an answer to this critique, except to maybe point to the Zapatista model (Shenker, 2012), in which community members pick and choose the pieces of the colonialist educational system (i.e. technical manuals, etymology of languages, geometry and trigonometry for construction) which are useful while discarding the oppressive elements (colonial history, economics, biology as division/classification of species). This, in itself, is a kind of fragmentation – but a fragmentation with the aim of making whole what was decimated by the colonial capitalist system (i.e. indigenous culture, science, history and literature). I will make explicit that I do not call for the imposition of any idea or change by force, as this would be a direct contradiction to the shift I am envisioning. This shift to the edges is happening, and, “what we have to do in regard to the great wisdom from the whole of the past, both in the East and the West, is to assimilate it and to go on to new and original perception relevant to our present condition in life” (Bohm, 1980, p. 24).

A third critique is based on the way in which my own race and privilege (as a white woman in the United States) is impacting my perspective and approach. The idea of the edge/wildness has long been a euphemism for gentrification/colonization, and, while I hope that I have managed to avoid this framing, I recognize that, given my position and background, this piece may well be interpreted in this way. Again, I do not necessarily have an answer to the critique, but I do want to recognize and name it.

Conclusion

Quantum science has provided new insight into relationships – from the sub-atomic to the global. Wheatley stated that, “No sub-atomic particle exists independent of its participation with other particles. And

even reality is evoked through acts of participation between us and what we choose to notice" (Wheatley, 1999, p. 163). This fact, made evident in the studies of the behavior of sub-atomic particles, is what gives me hope that there will be a paradigm shift, and that our work in the *Blessed unrest* (Hawken, 2007) can serve as an integral part in this shift. It is not a critical mass of people that needs to understand this concept, it is simply a critical juxtaposition of relationships that need to coexist to be able to impart this paradigm shift toward a sustainable future led by indigenous wisdom instead of short-term profit. The fact that relationships form the basis of the tiniest components of every part of our universe is enough, in my view, to give anyone hope in what will become of us and of our planet in the future.

The crises addressed in this paper are three: ecological, structural and epistemological. All are components of the same crisis, however, presenting themselves in different forms. The crisis is profound, and affects every aspect of life as we know it. Education can be a means to transform our society to see us through this crisis to the next stage, if we allow ourselves to let go of our illusion of control. Through networks of coalitions that are forming worldwide right now between groups as diverse as disaffected urban youth in U.S. inner cities to African elders engaged in environmental restoration, a new kind of pedagogy is developing in which *each one teach one* is the rallying cry, and transformative learning based in social justice activism is already taking place on a bigger scale than most people realize.

This paper calls for a pedagogy of the edges – as in permaculture, where the edges are the place where dynamic change and growth occurs, so too in our societies and our planet – as the hegemony of racist capitalist patriarchy crumbles, the wild edges become the guide as to a new way of organizing society in an ecologically complete and embodied way. Am I calling for the transformation of the educational system as a whole? Yes, and not only the educational system, but modern, capitalist society as we know it. To create a cartography of edges, a transformational tapestry based in the threads of ecological discourse and design, the threads are already being woven – the transformation is already taking place.

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